AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Previously Presented):   An image processing method comprising:

a determination step of determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on an image;

a first calculation step of calculating a first value determined corresponding to each of said plurality of areas, based on pixel values of each area;

a second calculation step of calculating a second value concerning a first order differential value between each combination of the two representative values;

a third calculation step of calculating a third value concerning using each combination of the two second values; and

a judgment step of judging an edge point of an irradiation area from the third value.

Claim 2 (Previously Presented):   A method according to Claim 1, further comprising a step of extracting the irradiation area from a plurality of the edge points.

Claim 3 (Previously Presented):   A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is an average value of pixel values in the corresponding area.

Claim 4 (Previously Presented):   A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is a median value of pixel values in the corresponding area.

Claim 5 (Previously Presented):   A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is an average value of a limited number of pixel values in the corresponding area.

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Claim 6 (Previously Presented): A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is a median value of a limited number of pixel values in the corresponding area.

Claim 7 (Previously Presented): A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is calculated by integrating pixel values in a direction in the corresponding area.

Claim 8 (Previously Presented): A method according to Claim 1, wherein each of the first values representing different one of the plurality of areas is obtained by smoothing pixel values in the corresponding area.

Claims 9-25 (Canceled)

Claim 26 (Previously Presented): A computer-readable storage medium storing a program for making a computer execute an image processing method, said method comprising:

a determination step of determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on an image;

a first calculation step of calculating a first value determined corresponding to each of said plurality of areas, based on pixel values of each area;

a second calculation step of calculating a second value concerning a first order differential value between each combination of the two representative values;

a third calculation step of calculating a third value concerning using each combination of the two second values; and

a judgment step of judging an edge point of an irradiation area from the third values.

Claim 27-40 (Canceled)

Claim 41 (Previously Presented): A method according to Claim 1, wherein, in said third calculation step, a second order differential value is used as the third value.

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Claim 42 (Previously Presented): An image processing method according to claim 1, wherein

in said second calculation step, the first order differential value is calculated from each combination of the adjacent representative values in the representative values calculated in said representative value calculation step; and

in said third calculation step, a second order difference value is calculated as a value representing an irradiation end from each combination of the adjacent first order differential values, in the first order differential values calculated in said density gradient calculating step.

Claim 43 (Canceled)

Claim 44 (Previously Presented): An irradiation image pickup apparatus having an irradiation area extraction function, comprising:

X-ray irradiation means having a function of an irradiation diaphragm for irradiating an X-ray;

a sensor for converting the X-ray into an image;

a determination means for determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on the image;

a first calculation means for calculating a first value determined corresponding to each of said plurality of areas, based on pixel values of each area;

a second calculation means for calculating a second value concerning a first order differential value between each combination of the two representative values;

a third calculation means for calculating a third value using each combination of the two second values; and

a judgment means for judging an edge point of an irradiation area from the third values.

Claims 45-49 (Canceled)

Claim 50 (Previously Presented): A method according to claim 46, wherein said

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selection step comprises:

a step of determining a plurality of areas, each of which including a plurality of pixels, arranged in a direction on an image;

a step of calculating second order difference values from values each of which represents different one of the plurality of areas; and

a step of obtaining an end point of an irradiation area from the second order difference values calculated in said calculation step.